Is this Effusion Just due to Bad Luck with Community-Acquired Pneumonia?

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Disclosure of Financial Relationships

• I have no financial relationships to disclose.
History of Present Illness

- 8-year-old, previously healthy, female
- 2-3 weeks weight loss, decreased energy, sweats and abdominal pain followed by 5 days of a non-productive cough
- No fever, chest pain, respiratory distress, emesis, or diarrhea
- No sick contacts
- Pt immigrated from Mexico 1.5 years ago. No reported TB contacts.

Additional Questions
Physical Exam

**Vitals:** HR 133  RR 33  BP 103/77  O2 sat: 97% on RA  wt: <3rd%  BMI 0.12%

**Gen:** awake, alert, tired and thin appearing

**CVS:** +tachycardia, S1 S2 normal, no murmur, no rub/gallop, WWP, cap refill <2 sec., no cyanosis

**Resp:** +tachypnea, no air movement left, +dullness to percussion left with crackles, no wheeze, no ronchi

**Abd:** +BS, soft, NT/ND, no HSM

**Ext:** no edema, no clubbing, no deformities

**Skin:** no rashes

Initial Differential Diagnosis

- Malignancy
  - Lymphoma
  - Leukemia
  - Other malignancy
- Endocrine
  - Hyperthyroid
- Tuberculosis
- Pneumonia
- Fungal
  - Histoplasmosis
  - Coccidioimycosis
  - Aspergillus
- HIV
- Hepatitis
- Mononucleosis
- Infections
**Initial Work-Up**

- WBC - 11.7 > 12.6/38.2 < 480
  - No bandemia
  - Normal smear
- CRP 1.91
- CMP – normal
- GGT 7 and LDH 278
- Amylase 264, lipase 1944

**Initial Laboratory Work-Up**

- Infectious evaluation:
  - TB
  - HIV
  - Brucella
  - Strongyloides
  - Histoplasmosis
  - Hepatitis B/C
  - Aspergillosis
  - Echinococcus

- Bacterial and fungal blood cultures
Further Initial Imaging Work-Up

• CT Chest
• CT abdomen - normal
• RUQ ultrasound - normal

Evolving Differential Diagnosis

• Malignancy
  • Lymphoma
  • Leukemia
  • Other malignancy
• GI
  • Pancreatitis
• Endocrine
  • Hyperthyroid

• Infections
  • Tuberculosis
  • HIV
  • Fungal
  • CAP w/parapneumonic effusion
  • Hepatitis
  • Mononucleosis
Clinical Course - Week One

• Patient Status
  • Chest tube had persistent drainage of pleural fluid
  • Never had a fever
  • Unable to tolerate PO intake
  • Persistently elevated amylase/lipase

• Work-up
  • Sweat test – #1 indeterminate and #2 normal
  • Infectious work-up negative

Clinical Course – Week 2

• Original CT abdomen reviewed
Review of Pancreas Anatomy

Pancreatic Ducts

https://www.memorangapp.com/flashcards/49387/Anatomy+of+the+Abdomen/
MRCP
MCRP T2 weighted images
CHRONIC PANCREATITIS

- Hereditary pancreatitis
- Cystic Fibrosis
- Autoimmune pancreatitis
- Obstruction

- Toxic-Metabolic Risk Factors
  - Alcohol, tobacco
  - Medications
  - Hyperlipidemia
  - Hypercalcemia

Final Results

- Genetic Studies:
  - CFTR studies positive with 2 clinically significant mutations:
    - Delta-F508
    - 12TG-5T
  - Pancreatitis gene panel:
    - Single pathogenic variant SPINK1
Pathophysiology

Patient’s Final Diagnosis

Pancreaticopleural fistula in setting of chronic pancreatitis due to cystic fibrosis with pancreatic insufficiency
Wrap-Up

• Very uncommon presentation of a common condition

• Clues of pancreatitis in the setting of failure to thrive with pulmonary abnormalities led to the diagnosis

• Genetic mutations are the most common cause of chronic pancreatitis in pediatrics

Lessons Learned

1. Cystic fibrosis can present at any age with varying degree of symptoms

2. In a pleural effusion that keeps draining consider pancreaticopleural fistula

3. Re-review your imaging with radiology if the clinical picture isn’t adding up

1. Remember to include chronic pancreatitis on the differential for failure to thrive
References


